CLAIMS

1   1-26.   (canceled)

1   27.   (currently amended) In a system comprising a first processor and one or more other
2   processors, a method for applying one or more interrupt signals to the one or more other processors, the
3   method comprising:
4   (a)   generating, in the first processor, a data word having two or more data bits, wherein each
5   data bit has either a first bit value or a second bit value;
6   (b)   transmitting the data word from a data port of the first processor to a signal unit external
7   to the first processor and the one or more other processors;
8   (c)   converting, in the signal unit, the data word into two or more interrupt signals by
9   analyzing the bit value of each of two or more data bits in the data word, wherein each analyzed data bit
10   in the data word having a specified bit value corresponds to a different interrupt signal; and
11   (d)   transmitting each interrupt signal from the signal unit to an interrupt port of an other
12   processor, wherein the signal unit detects a transition in each analyzed data bit of the data word over time
13   to determine when to generate a corresponding interrupt signal.

1   28.   (canceled)

1   29.   (previously presented) The invention of claim 27, wherein at least two interrupt signals
2   are transmitted to two different interrupt ports of a single other processor.

1   30.   (previously presented) The invention of claim 27, wherein at least two interrupt signals
2   are transmitted to interrupt ports of at least two different other processors.

1   31.   (canceled)

1   32.   (currently amended) The invention of claim [[31]] 27, wherein the signal unit detects the
2   transition by:
3   storing sequential values for the corresponding data bit in two registers; and
4   comparing outputs from the two registers to detect a difference between the two sequential
5   values.

1   33.   (previously presented) The invention of claim 32, wherein:

2   the first processor transmits an address signal to the signal unit; and

3   the signal unit compares the address signal to a specified value to determine whether to store the

4   two sequential values in the two registers.

1   34.   (previously presented) The invention of claim 27, wherein each interrupt signal is

2   transmitted from the signal unit to a corresponding interrupt port of a corresponding other processor via a

3   dedicated line.

1   35.   (previously presented) The invention of claim 34, wherein the data word is transmitted

2   from the first processor to the signal unit via a shared data bus.

1   36.   (previously presented) The invention of claim 27, further comprising applying an

2   interrupt signal from an other processor to the first processor by:

3   (1)   generating, in the other processor, an other data word having one or more other data bits,

4   wherein each other data bit has either the first bit value or the second bit value;

5   (2)   transmitting the other data word from a data port of the other processor to an other signal

6   unit external to the first processor and the one or more other processors;

7   (3)   converting, in the other signal unit, the other data word into one or more other interrupt

8   signals by analyzing the bit value of each of one or more other data bits in the other data word, wherein

9   each analyzed other data bit in the other data word having the specified bit value corresponds to a

10   different other interrupt signal; and

11   (4)   transmitting an other interrupt signal from the other signal unit to an interrupt port of the

12   first processor.

1   37.   (previously presented) The invention of claim 36, wherein at least one other interrupt

2   signal is transmitted from the other signal unit to an interrupt port of at least one other processor.

1   38.   (currently amended) A system comprising a first processor connected to one or more

2   other processors via a signal unit external to the first processor and the one or more other processors,

3   wherein:

4   the first processor is adapted to (i) generate a data word having two or more data bits, wherein

5   each data bit has either a first bit value or a second bit value, and (ii) transmit the data word from a data

6   port of the first processor to the signal unit; [[and]]

7   the signal unit is adapted to (i) convert the data word into two or more interrupt signals by

8   analyzing the bit value of each of two or more data bits in the data word, wherein each analyzed data bit

9   in the data word having a specified bit value corresponds to a different interrupt signal, and (ii) transmit

10   each interrupt signal from the signal unit to an interrupt port of an other processor; and

11   the signal unit is adapted to detect a transition in each analyzed data bit of the data word over

12   time to determine when to generate a corresponding interrupt signal.

1   39.   (canceled)

1   40.   (previously presented) The invention of claim 38, wherein the signal unit is connected to

2   transmit at least two interrupt signals to two different interrupt ports of a single other processor.

1   41.   (previously presented) The invention of claim 38, wherein the signal unit is connected to

2   transmit at least two interrupt signals to interrupt ports of at least two different other processors.

1   42.   (canceled)

1   43.   (currently amended) The invention of claim [[42]] 38, wherein the signal unit

2   comprises:

3   two registers adapted to store sequential values for each analyzed data bit; and

4   logic adapted to compare outputs from the two registers to detect the transition for a

5   corresponding data bit as a difference between the two sequential values.

1   44.   (previously presented) The invention of claim 43, wherein:

2   the first processor is adapted to transmit an address signal to the signal unit; and

3   the signal unit comprises an address decoder adapted to compare the address signal to a specified

4   value to determine whether to store the two sequential values in the two registers.

1   45.   (previously presented) The invention of claim 38, wherein the signal unit is connected to

2   transmit each interrupt signal to a corresponding interrupt port of a corresponding other processor via a

3   dedicated line.

1   46.   (previously presented) The invention of claim 45, wherein the first processor is

2   connected to transmit the data word to the signal unit via a shared data bus.

1   47.   (previously presented) The invention of claim 38, further comprising an other signal unit

2   connecting an other processor to the first processor, wherein:

3   the other signal unit is external to the first processor and the one or more other processors;

4   the other processor is adapted to (i) generate an other data word having one or more other data

5   bits, wherein each other data bit has either the first bit value or the second bit value, and (ii) transmit the

6   other data word from a data port of the other processor to the other signal unit; and

7   the other signal unit is adapted to (i) convert the other data word into one or more other interrupt

8   signals by analyzing the bit value of each of one or more other data bits in the other data word, wherein

9   each analyzed other data bit in the other data word having the specified bit value corresponds to a

10   different other interrupt signal and (ii) transmit an other interrupt signal from the other signal unit to an

11   interrupt port of the first processor.

1   48.   (previously presented) The invention of claim 47, the other signal unit is adapted to

2   transmit at least one other interrupt signal to an interrupt port of at least one other processor.

1   49-50. (canceled)

1   51.   (currently amended) A signal unit for a system comprising a first processor connected to

2   one or more other processors via the signal unit external to the first processor and the one or more other

3   processors, wherein:

4   the first processor is adapted to (i) generate a data word having two or more data bits, wherein

5   each data bit has either a first bit value or a second bit value, and (ii) transmit the data word from a data

6   port of the first processor to the signal unit; [[and]]

7   the signal unit is adapted to (i) convert the data word into two or more interrupt signals by

8   analyzing the bit value of each of two or more data bits in the data word, wherein each analyzed data bit

9   in the data word having a specified bit value corresponds to a different interrupt signal, and (ii) transmit

10   each interrupt signal from the signal unit to an interrupt port of an other processor;

11   the data word has a plurality of analyzed data bits;

12   the signal unit is adapted to convert the data word into a plurality of interrupt signals; and

13   the signal unit is adapted to transmit each interrupt signal to a different interrupt port of an other

14   processor;

15   the signal unit is adapted to transmit at least two interrupt signals to two different interrupt ports

16   of a single other processor;

17   the signal unit is adapted to transmit at least two interrupt signals to interrupt ports of at least two

18   different other processors;

19   the signal unit is adapted to detect a transition in each analyzed data bit of the data word over

20   time to determine when to generate a corresponding interrupt signal;

21   the signal unit is adapted to receive the data word from the first processor via a shared data bus;

22   and

23   the signal unit is adapted to transmit each interrupt signal to a corresponding interrupt port of a

24   corresponding other processor via a dedicated line.

1   52.   (canceled)

1   53.   (previously presented) In a system comprising a first processor and one or more other

2   processors, a method for applying one or more interrupt signals to the one or more other processors, the

3   method comprising:

4   (a)   generating, in the first processor, a data signal having two or more data bits, wherein

5   each data bit has either a first bit value or a second bit value;

6   (b)   transmitting the data signal from a data port of the first processor to a signal unit external

7   to the first processor and the one or more other processors;

8   (c)   converting, in the signal unit, the data signal into one or more interrupt signals by

9   analyzing the bit value of each of two or more data bits in the data signal, wherein each analyzed data bit

10   in the data signal having a specified bit value corresponds to a different interrupt signal; and

11   (d)   transmitting each interrupt signal from the signal unit to an interrupt port of an other

12   processor, wherein:

13   the signal unit detects a transition in each analyzed data bit of the data signal over time to

14   determine when to generate a corresponding interrupt signal; and

15   the signal unit detects the transition by:

16   storing sequential values for the corresponding data bit in two registers; and

17   comparing outputs from the two registers to detect a difference between the two

18   sequential values.

1   54.   (previously presented) The invention of claim 53, wherein:

2   the first processor transmits an address signal to the signal unit; and

3   the signal unit compares the address signal to a specified value to determine whether to store the

4   two sequential values in the two registers.

1   55.   (previously presented) A system comprising a first processor connected to one or more

2   other processors via a signal unit external to the first processor and the one or more other processors,

3   wherein:

4   the first processor is adapted to (i) generate a data signal having two or more data bits, wherein

5   each data bit has either a first bit value or a second bit value, and (ii) transmit the data signal from a data

6   port of the first processor to the signal unit; and

7   the signal unit is adapted to (i) convert the data signal into one or more interrupt signals by

8   analyzing the bit value of each of two or more data bits in the data signal, wherein each analyzed data bit

9   in the data signal having a specified bit value corresponds to a different interrupt signal, and (ii) transmit

10   each interrupt signal from the signal unit to an interrupt port of an other processor, wherein:

11   the signal unit is adapted to detect a transition in each analyzed data bit of the data signal over

12   time to determine when to generate a corresponding interrupt signal; and

13   the signal unit comprises:

14   two registers adapted to store sequential values for each analyzed data bit; and

15   logic adapted to compare outputs from the two registers to detect the transition for a

16   corresponding data bit as a difference between the two sequential values.

1   56.   (previously presented) The invention of claim 55, wherein:

2   the first processor is adapted to transmit an address signal to the signal unit; and

3   the signal unit comprises an address decoder adapted to compare the address signal to a specified

4   value to determine whether to store the two sequential values in the two registers.

1   57.   (previously presented) A signal unit for a system comprising a first processor connected

2   to one or more other processors via the signal unit external to the first processor and the one or more

3   other processors, wherein:

4   the first processor is adapted to (i) generate a data signal having two or more data bits, wherein

5   each data bit has either a first bit value or a second bit value, and (ii) transmit the data signal from a data

6   port of the first processor to the signal unit; and

7   the signal unit is adapted to (i) convert the data signal into one or more interrupt signals by

8   analyzing the bit value of each of two or more data bits in the data signal, wherein each analyzed data bit

9   in the data signal having a specified bit value corresponds to a different interrupt signal, and (ii) transmit

10   each interrupt signal from the signal unit to an interrupt port of an other processor, wherein:

11   the signal unit is adapted to detect a transition in each analyzed data bit of the data signal over

12   time to determine when to generate a corresponding interrupt signal; and

13   the signal unit comprises:

14   two registers adapted to store sequential values for each analyzed data bit; and

15   logic adapted to compare outputs from the two registers to detect the transition for a

16   corresponding data bit as a difference between the two sequential values.

1   58.   (previously presented) The invention of claim 57, wherein:

2   the first processor is adapted to transmit an address signal to the signal unit; and

3   the signal unit comprises an address decoder adapted to compare the address signal to a specified

4   value to determine whether to store the two sequential values in the two registers.

1   59.   (new) In a system comprising a first processor and one or more other processors, a

2   method for applying one or more interrupt signals to the one or more other processors, the method

3   comprising:

4   (a)   generating, in the first processor, a data word having two or more data bits, wherein each

5   data bit has either a first bit value or a second bit value;

6   (b)   transmitting the data word from a data port of the first processor to a signal unit external

7   to the first processor and the one or more other processors;

8   (c)   converting, in the signal unit, the data word into two or more interrupt signals by

9   analyzing the bit value of each of two or more data bits in the data word, wherein each analyzed data bit

10   in the data word having a specified bit value corresponds to a different interrupt signal; and

11   (d)   transmitting each interrupt signal from the signal unit to an interrupt port of an other

12   processor, wherein at least two interrupt signals are transmitted to two different interrupt ports of a single

13   other processor.

1   60.   (new) A system comprising a first processor connected to one or more other processors

2   via a signal unit external to the first processor and the one or more other processors, wherein:

3   the first processor is adapted to (i) generate a data word having two or more data bits, wherein

4   each data bit has either a first bit value or a second bit value, and (ii) transmit the data word from a data

5   port of the first processor to the signal unit;

6   the signal unit is adapted to (i) convert the data word into two or more interrupt signals by

7   analyzing the bit value of each of two or more data bits in the data word, wherein each analyzed data bit

8   in the data word having a specified bit value corresponds to a different interrupt signal, and (ii) transmit

9   each interrupt signal from the signal unit to an interrupt port of an other processor; and

10   the signal unit is connected to transmit at least two interrupt signals to two different interrupt

11   ports of a single other processor.

1   61.   (new) A system comprising a first processor connected to one or more other processors

2   via a signal unit external to the first processor and the one or more other processors, wherein:

3   the first processor is adapted to (i) generate a data word having two or more data bits, wherein

4   each data bit has either a first bit value or a second bit value, and (ii) transmit the data word from a data

5   port of the first processor to the signal unit;

6   the signal unit is adapted to (i) convert the data word into two or more interrupt signals by

7   analyzing the bit value of each of two or more data bits in the data word, wherein each analyzed data bit

8   in the data word having a specified bit value corresponds to a different interrupt signal, and (ii) transmit

9   each interrupt signal from the signal unit to an interrupt port of an other processor;

10   further comprising an other signal unit connecting an other processor to the first processor,

11   wherein:

12   the other signal unit is external to the first processor and the one or more other

13   processors;

14   the other processor is adapted to (i) generate an other data word having one or more

15   other data bits, wherein each other data bit has either the first bit value or the second bit value, and (ii)

16   transmit the other data word from a data port of the other processor to the other signal unit; and

17   the other signal unit is adapted to (i) convert the other data word into one or more other

18   interrupt signals by analyzing the bit value of each of one or more other data bits in the other data word,

19   wherein each analyzed other data bit in the other data word having the specified bit value corresponds to

20   a different other interrupt signal and (ii) transmit an other interrupt signal from the other signal unit to an

21   interrupt port of the first processor.

1   62.   (new) The invention of claim 61, the other signal unit is adapted to transmit at least one

2   other interrupt signal to an interrupt port of at least one other processor.